# Win New Business with an Agile Bidding Solution Based on SLIM

1. The Competitive Bidding Challenge

In today's competitive marketplace you have to be on your game if you expect to win new IT integration contracts. You need to put together a masterpiece proposal on a shoe string budget. You are working with scarce requirements, a short time fuse, limited availability of technical solution engineers, limited business intelligence and losing isn't an option.

2. The SLIM Solution

The SLIM tool suite is a mature and proven tool set and modeling methodology that has been refined over 35 years with innovative improvements. SLIM is an ideal solution for business capture professionals because it doesn't require a lot of information, it can allow one to quickly explore potential bidding scenarios, it is collaborative, it provides transparency and can easily pass information to your pricing systems.
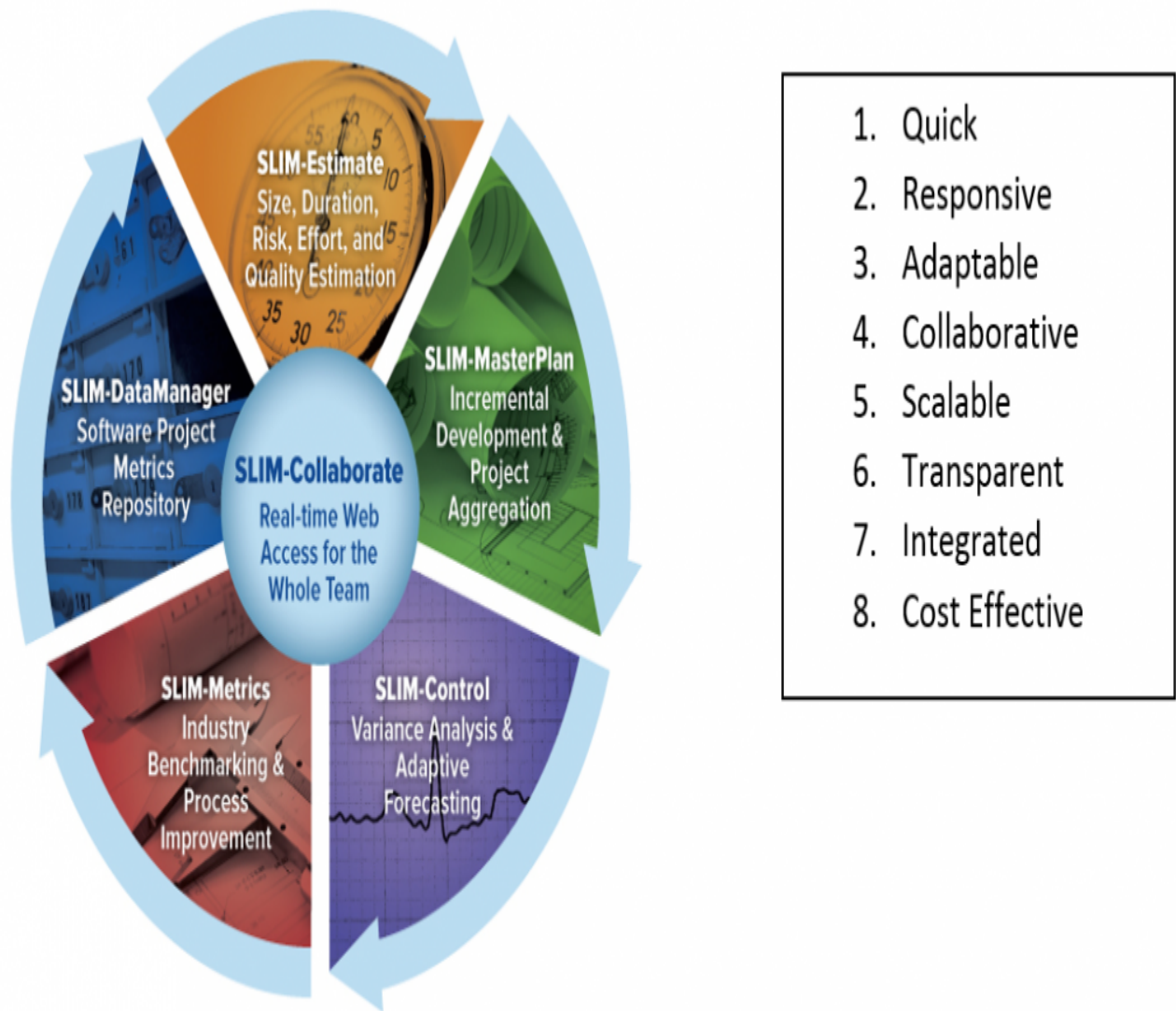
Figure 1. This diagram shows the different components of the SLIM Suite of estimation and risk management tools.

We will use an example scenario to show how the SLIM suite supports the bidding process:

3. Sample Bidding Scenario

A government agency has just released an RFP for the development of a new cloud based application to administer healthcare benefits. Here are the broad parameters that need to be satisfied to meet the customer objective:

1. There are a total of 2345 requirements in three major functionality areas. They are Enrollment, Subsidies, and Benefits Administration.
2. They want an incremental delivery of the functionality to be completed within 3 years. Priorities have

been established on the early capabilities that are needed.
3. They would like the development done using the SAFe scaled agile methodology.
4. There is infrastructure that needs to be built out and delivered with each incremental delivery.
5. There is some operational support also required after the first increment goes live.

So now it is time to get to work. The first step is to get with the technical team and determine how the requirements would be allocated into a sensible release structure to meet the desired three-year time frame and provide enough value in each increment. In essence, we are grooming the backlog and defining an agile release train. After one meeting the team comes up with a proration of requirements into 3 releases as shown below.

Requirements	Release 1	Release 2	Release 3
Enrollment	542	72	22
Subsidies	348	238	161
Benefits Administration	454	263	245
Totals	1344	573	428

The next step is to use a sizing utility with industry gearing factors to turn requirements into a sizing form that can be input to the SLIM Release Estimator. Figure 2 shows how the sizing utility is used to translate Release 1 enrollment requirements into a number of potentially useful sizing metrics like agile story counts, product configuration and RICE FW components, Function points etc. The inputs are shown on the right and the resulting outputs are on the left.

Current Assumptions

Sizing Unit:	Functional Requirements
Number of Units:	542

Will this be in a Package Implementation? Yes
Percent Configuration: 40%
Percent RICEFW Objects: 60%

Number of Programming Languages: One
Programming Language (1): Java   Percent of Project: 30%

Must total to 100% 100%

Average Language Gearing Factor: 53

Stage of Estimation: Approved Product   Uncertainty Setting + Max

Outputs

Sizing Unit	Expected Size
Business Requirements	90
Package Implemenation	407
Configuration	163
RICEFW Objects	244
Use Cases	136
User Stories	542
Functional Requirements	542
Function Points	2,710
Implementation Units (IU)	143,630
Source Lines of Code (SLOC)	143,630

Figure 2. The functional requirements for the Enrollment portion of increment 1 are converted to multiple sizing outputs so they may be input into the SLIM Release Estimator.

After each of the releases has been put through the translator we have the size estimates for each release. This is shown in terms of requirements and Implementation Units (IU's). IU's are simply an elemental unit of programming. It could be a configuration step in package implementation or traditional lines of source code.

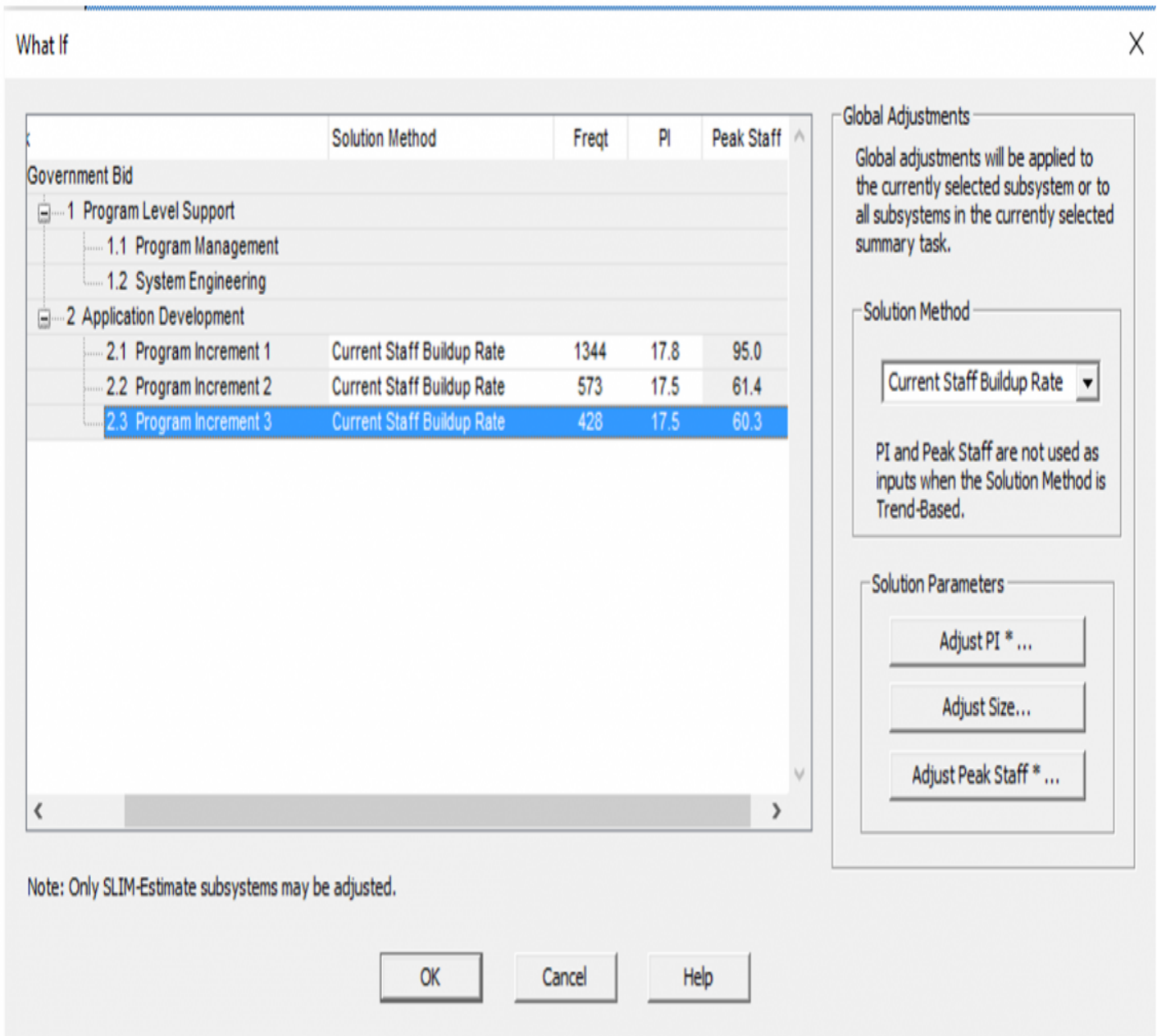| Requirements	Release 1 Reqts	Release 1 IU's	Release 2 Reqts	Release 2 IU's	Release 3 Reqts	Release 3 IU's
Enrollment	542	143,630	72	19,080	22	5,830
Susidies	348	92,220	238	63,070	161	42,665
Benefits Adminstration	454	120,310	263	69,695	245	64,925
Totals	1,344	356,160	573	151,845	428	113,420

Figure 3. Requirement allocations for each release by functional area and the translation into IU's (Implementation Units)

At this point you are ready to start building the estimate.   We start by adding two summary groups, one for the 3 application development releases and a second for program level support activities.   For the application development releases we start with our SLIM out-of-the-box agile release template and we clone it three times. Next we add some schedule dependencies to control the amount of concurrency that will be allowed between releases but also provide for a smooth resource loading profile.

Program Structure

- Government Bid
  - Σ Program Level Support
    - Program Management
    - System Engineering
  - Σ Application Development
    - Program Increment 1
    - Program Increment 2
    - Program Increment 3

What If   X

	Solution Method	Freqt	PI	Peak Staff
Government Bid				
⊟ 1 Program Level Support				
1.1 Program Management				
1.2 System Engineering				
⊟ 2 Application Development				
2.1 Program Increment 1	Current Staff Buildup Rate	1344	17.8	95.0
2.2 Program Increment 2	Current Staff Buildup Rate	573	17.5	61.4
2.3 Program Increment 3	Current Staff Buildup Rate	428	17.5	60.3

Global Adjustments

Global adjustments will be applied to the currently selected subsystem or to all subsystems in the currently selected summary task.

Solution Method

Current Staff Buildup Rate ▼

PI and Peak Staff are not used as inputs when the Solution Method is Trend-Based.

Solution Parameters

Adjust PI * ...

Adjust Size...

Adjust Peak Staff * ...

Note: Only SLIM-Estimate subsystems may be adjusted.

OK   Cancel   Help

Figure 4. SLIM program builder showing the major program components and the size, productivity and staffing assumptions for the initial estimate.

Next we adjust the productivity and peak staffing if our technical folks are able to articulate reasons for moving away from a "typical agile development," which is captured in the SLIM agile template. We add Program Management and Systems Engineering.   Then we make them a percentage of the overall program so that they scale up or down depending on the size and complexity of the program.For the Program Management component, we use a level load staffing profile. For Systems Engineering we pick a shape where the staffing profile peaks early and tapers off towards the end of the contract.
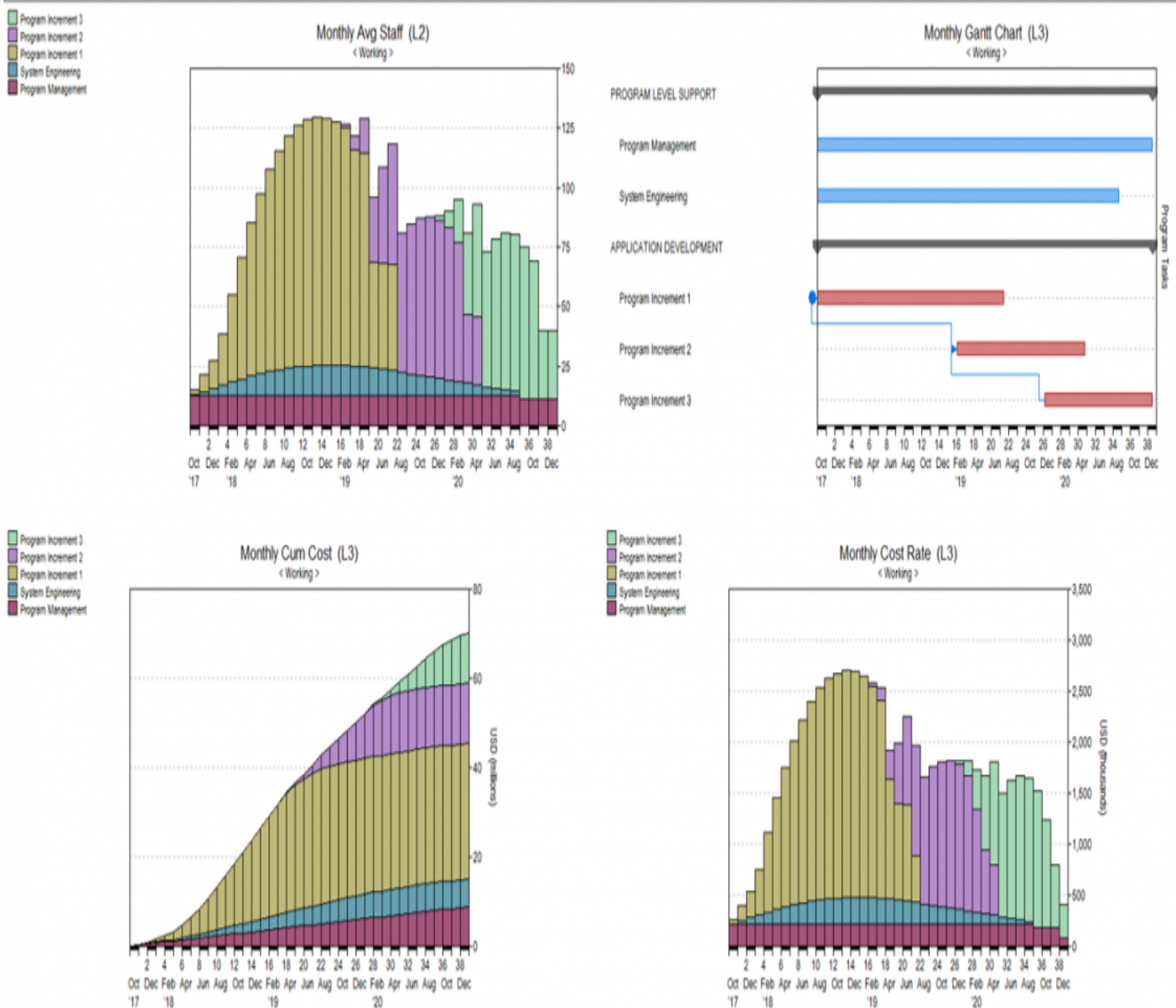
Figure 5. Partial estimate showing staffing, schedule, cumulative cost and monthly spending rate. Each major component has a unique color for easy identification.

Now you are in a position to look at aggregate staffing, spending rates and cumulative cost as well as the schedules for each of the increments.

Next we need to add an infrastructure build for each application release. We start with the SLIM out-of-the-box infrastructure template and size the release to the required infrastructure components. We use the typical productivity and staffing from the SLIM database to get us started. Each infrastructure release is then linked to the appropriate application release.   Finally, we add a help desk and data center component which are estimated as level of effort staffing based on prior contract program experience.
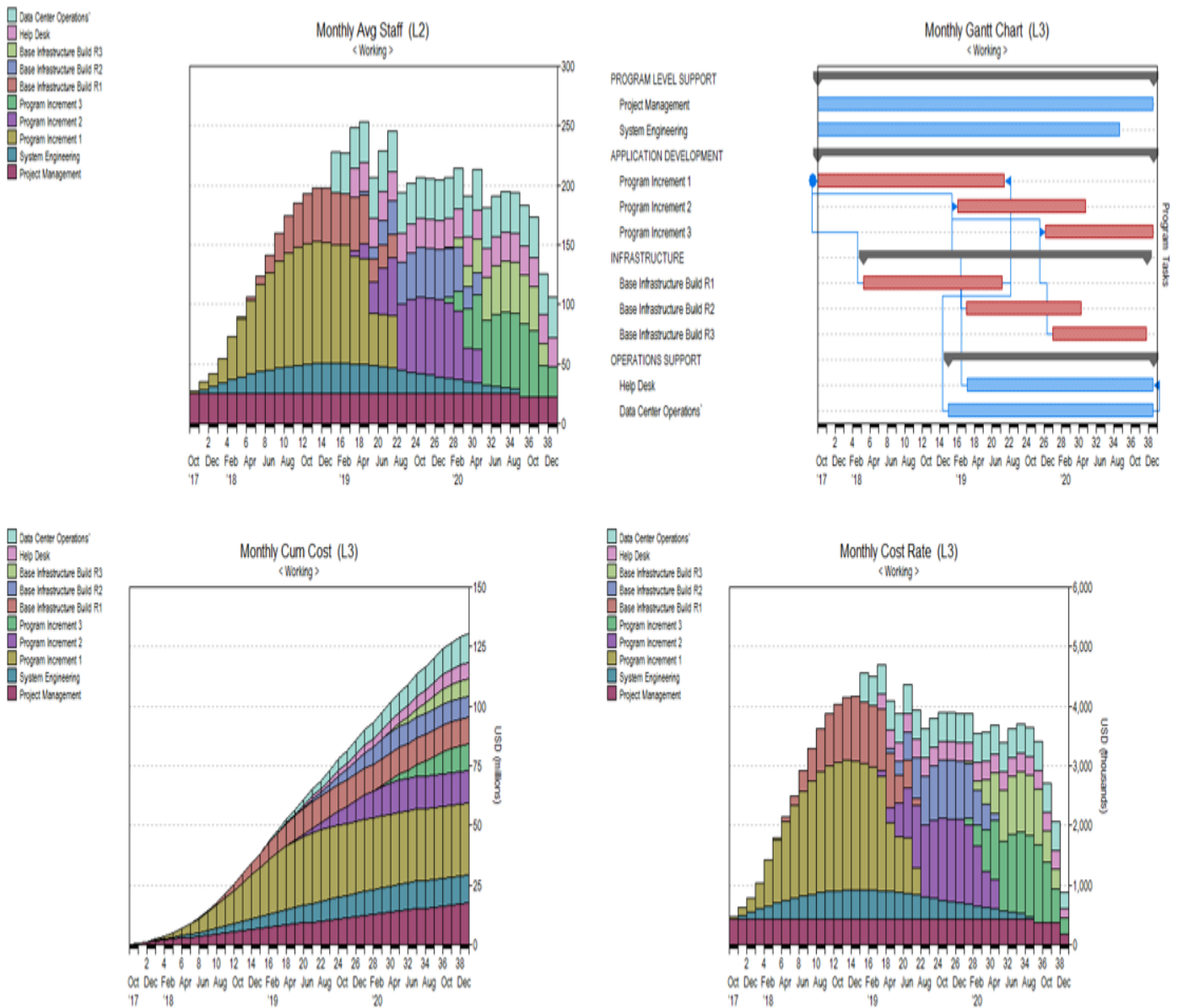
Figure 6. Full estimate with all the major components identified and priced.

Our bid is starting to take shape. The staffing profile looks like it averages about 200 people with a short peak toward the end of the 1st increment at approximately 250 people. The estimated cost is approximately $130 million. Unfortunately, the schedule is a couple of months too long.

Task	Task Description	Start Date	End Date	Elapsed Months	PHR	(USD1000)
PROGRAM LEVEL SUPPORT	Summary Task	10/1/2017	12/19/2020	38.61	278,328	29,135
Project Management	Custom Task	10/1/2017	12/19/2020	38.61	173,955	17,395
System Engineering	Custom Task	10/1/2017	8/25/2020	34.81	104,373	11,740
APPLICATION DEVELOPMENT	Summary Task	10/1/2017	12/19/2020	38.61	445,679	55,036
Program Increment 1	SLIM-Estimate Subsystem (release 1...	10/1/2017	7/15/2019	21.48	246,128	30,320
Program Increment 2	SLIM-Estimate Subsystem (release 1...	2/4/2019	4/26/2020	14.76	109,376	13,536
Program Increment 3	SLIM-Estimate Subsystem (release 1...	12/8/2019	12/19/2020	12.39	90,175	11,179
INFRASTRUCTURE	Summary Task	3/8/2018	11/26/2020	32.64	199,963	27,161
Base Infrastructure Build R1	SLIM-Estimate Subsystem (release 1...	3/8/2018	7/9/2019	16.06	83,571	11,344
Base Infrastructure Build R2	SLIM-Estimate Subsystem (release 1...	3/3/2019	4/9/2020	13.24	63,897	8,683
Base Infrastructure Build R3	SLIM-Estimate Subsystem (release 1...	1/2/2020	11/26/2020	10.83	52,494	7,133
OPERATIONS SUPPORT	Summary Task	1/1/2019	12/19/2020	23.61	235,730	19,109
Help Desk	Custom Task	3/6/2019	12/19/2020	21.45	92,771	6,958
Data Center Operations`	Custom Task	1/1/2019	12/19/2020	23.61	142,959	12,151
Government Bid		10/1/2017	12/19/2020	38.61	1,159,700	130,441

With SLIM there is a program level what-if adjuster. You simply make global or individual parameter adjustments to scope, productivity or staff and can immediately view the impact. In this case, we increase the staffing by 20% across the board to see if this will compress the schedule.

The increased staffing will allow the bid to conform to the schedule requirement but it will be approximately $5 million more expensive.
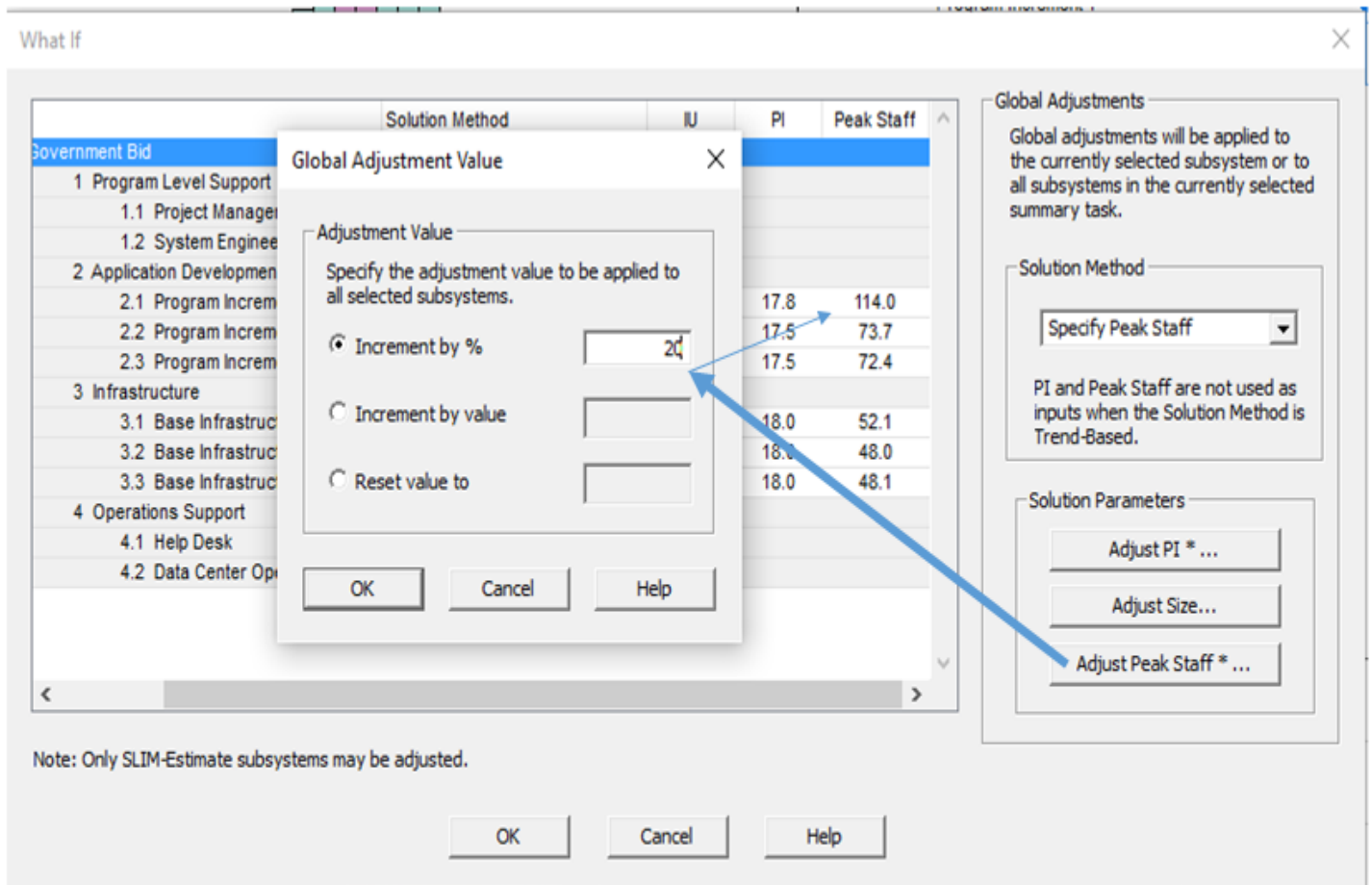
Figure 7. SLIM Global What-if Simulator showing how a 20% increase to staffing will impact the program estimate.
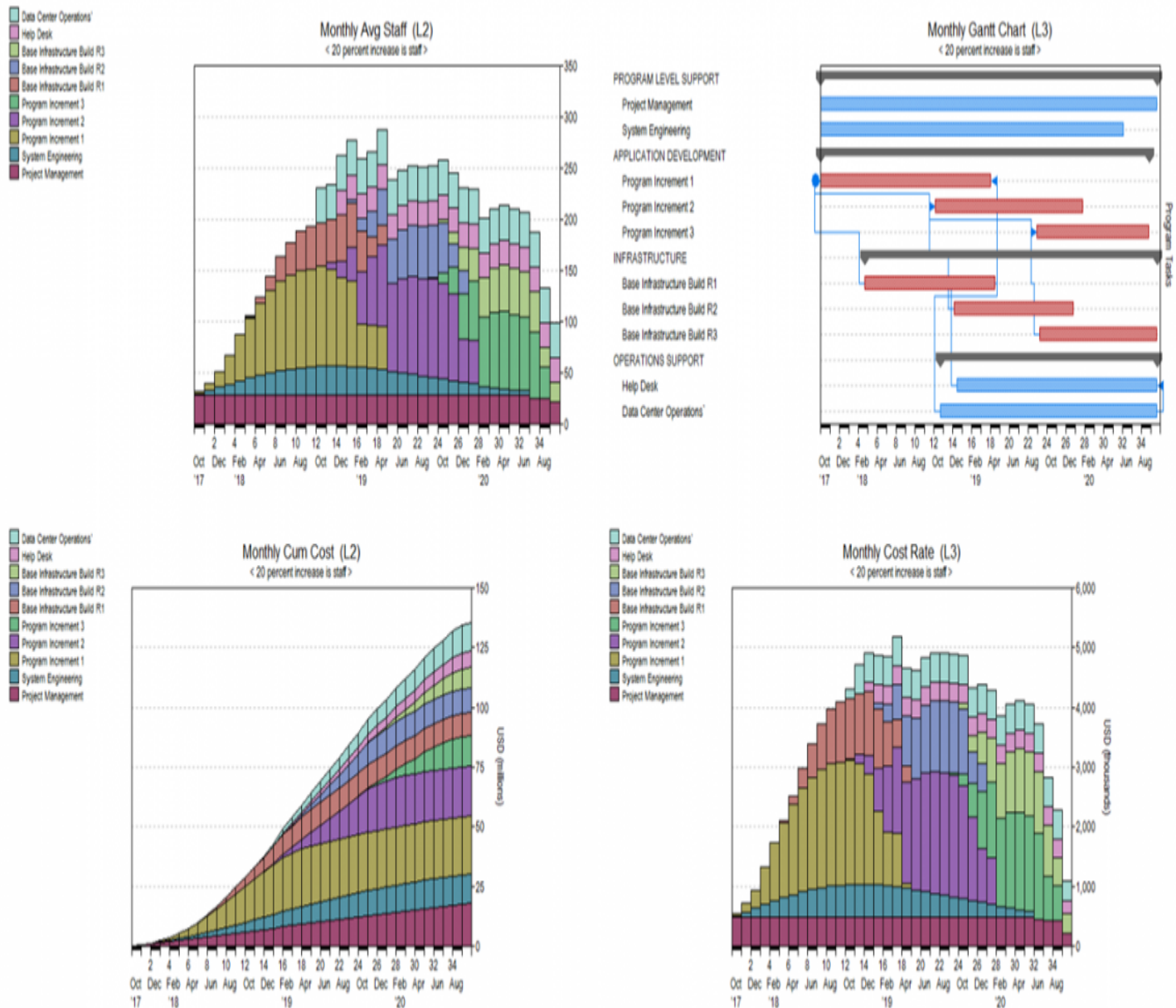
Figure 8. Updated estimate with a 20% increase to the staffing.

After exploring all of the viable options and deciding on the best bidding strategy, we can quickly generate an effort estimate for required labor to support this program.

This information can easily be turned into a table and passed to your corporate pricing systems if necessary or you can simply use the SLIM output as part of your bid. The SLIM templates have the ability to be configured to any set of labor categories and rates. Then the skills can be allocated as they will ramp on and off the release as they are needed.

Refine Resources and Costs

Configuration Options | Skill Categories | Skill Allocations

Skill Category Name	Acronym	External ID (optional)	Labor Rate (USD per hour)
Project Management	PM		180
Network Engineers	NE		170
Security Engineering	SE		170
Hardware Engineering	HE		170
Communication Engineering	CE		170
System Test	ST		120
Documentation	DOC		60
Support Staff	SUP		50

Figure 9. Labor category configuration for the infrastructure template and associated labor rates. This can be customized to any client environment or bidding situation.
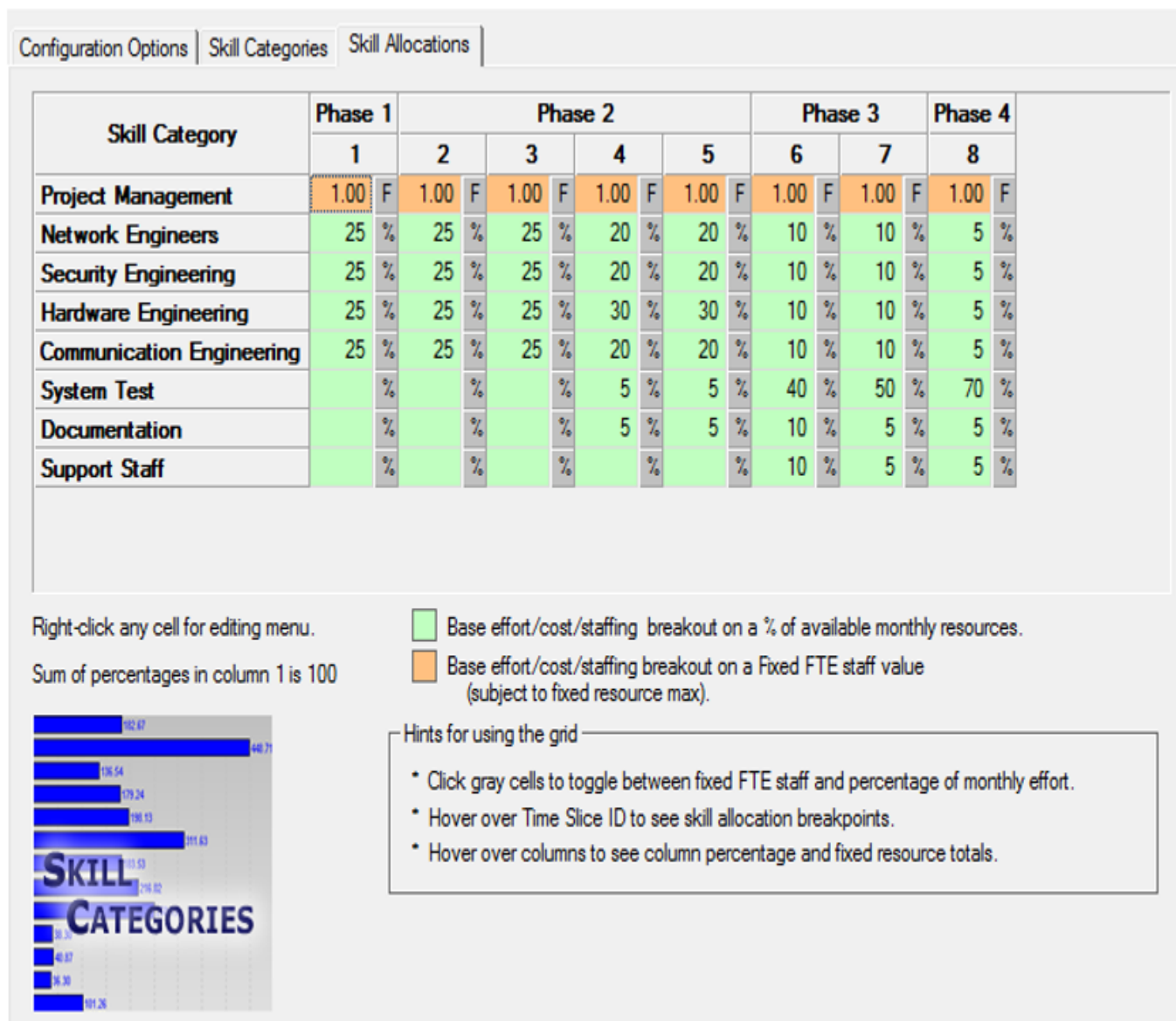
Skill Category	Phase 1		Phase 2								Phase 3				Phase 4	
	1		2		3		4		5		6		7		8	
Project Management	1.00	F	1.00	F	1.00	F	1.00	F	1.00	F	1.00	F	1.00	F	1.00	F
Network Engineers	25	%	25	%	25	%	20	%	20	%	10	%	10	%	5	%
Security Engineering	25	%	25	%	25	%	20	%	20	%	10	%	10	%	5	%
Hardware Engineering	25	%	25	%	25	%	30	%	30	%	10	%	10	%	5	%
Communication Engineering	25	%	25	%	25	%	20	%	20	%	10	%	10	%	5	%
System Test		%		%		%	5	%	5	%	40	%	50	%	70	%
Documentation		%		%		%	5	%	5	%	10	%	5	%	5	%
Support Staff		%		%		%		%		%	10	%	5	%	5	%

Right-click any cell for editing menu.

Sum of percentages in column 1 is 100

☐ Base effort/cost/staffing breakout on a % of available monthly resources.

☐ Base effort/cost/staffing breakout on a Fixed FTE staff value
(subject to fixed resource max).

Hints for using the grid

* Click gray cells to toggle between fixed FTE staff and percentage of monthly effort.
* Hover over Time Slice ID to see skill allocation breakpoints.
* Hover over columns to see column percentage and fixed resource totals.

Figure 10. Skills allocation configuration for the infrastructure project showing how the skills will ramp on and off the release.
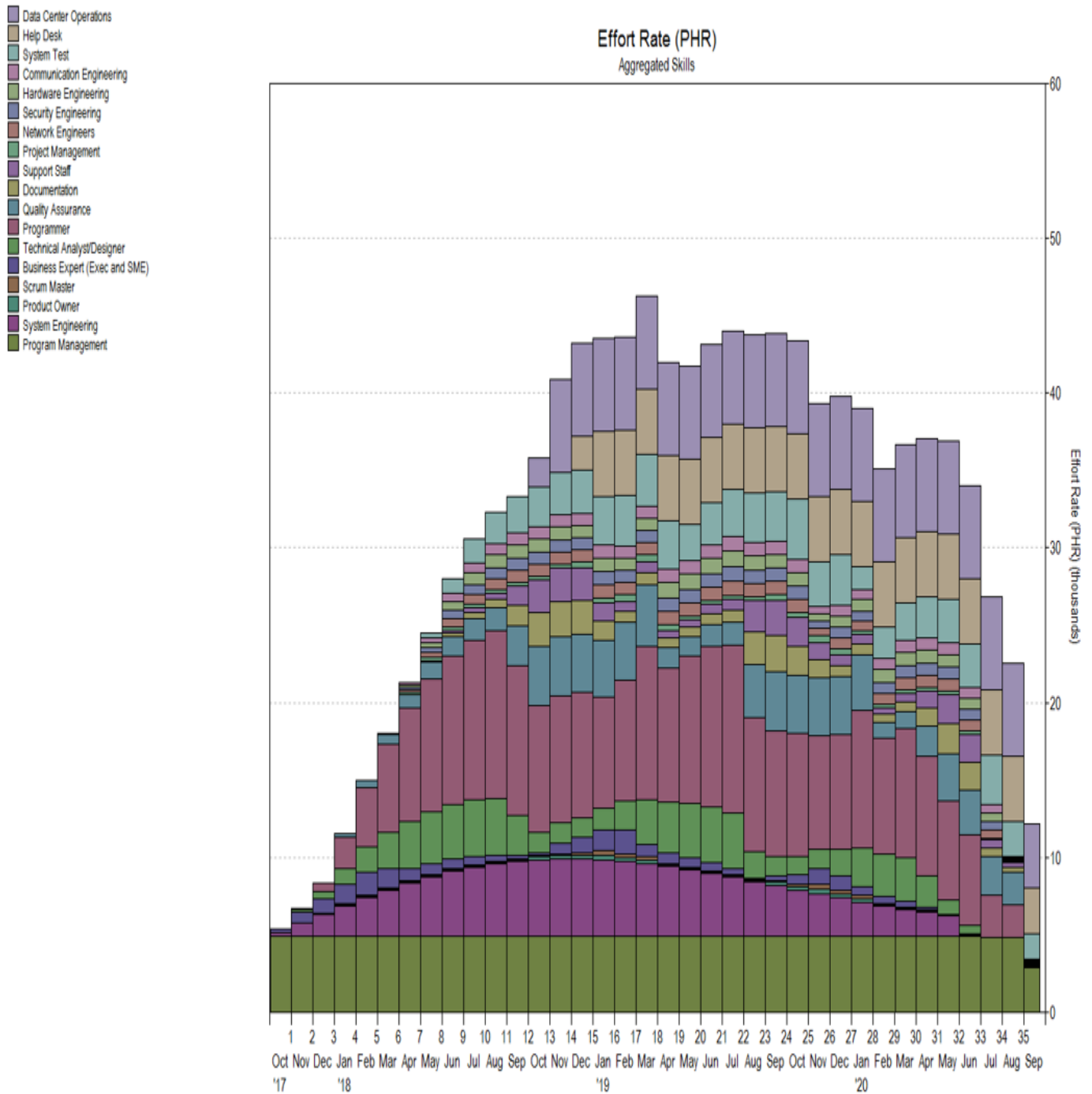
Figure 11. Aggregate program estimate showing the monthly effort hour expenditure for each of the labor categories. Similar charts exist for cost per month, cumulative cost and staffing.

4. Summary

The SLIM agile bidding solution will save you time and money and allow you to make more informed bidding decisions. It will help you win more business.

It is a top down modeling approach which is consistent with the level of information that is available at the bidding stage. It is easy to use and is quick and efficient at building alternative bids. It is a scalable solution that can work for straight forward single release projects or major transformational programs. It is collaborative and transparent because the assumptions are documented and easily explained. Finally, it can easily pass information to other corporate systems.

If you are losing too many bids get SLIM, make your capture team more agile and start winning.